

## DIFFUSION OF PROFESSION IN SRI LANKAN ORGANISATIONS: FACILITIES MANAGEMENT

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### Abstract

Facilities Management (FM) is the integrated management of the workplace to enhance the performance of the organization. It is obvious that competent FM will arouse effective working performance and the value of the organisation by increased employee productivity. Diffusion of Innovation (DOI) theory helps to explain the adoption process of innovation by modelling its entire life cycle according to the aspects of communications and human information interactions. Thus, this research aims to identify the influencing factors and nature of their effect on FM diffusion in Sri Lankan organisations, FM as a sample for the profession. A qualitative research approach was selected to conduct the research. A comprehensive literature synthesis was carried out at first to determine the existing data and also to develop the questionnaire survey which was designed for top management of FM adopted organisations in Sri Lanka. The questionnaire respondents were selected randomly with the available information. Collected data were analysed using manual content analysis and which was validated using a 95% confidence interval test. Research findings revealed that majority of FM adoption decision was taken in the Sri Lankan organisations by Board of Directors/ Managing Director which is authority type organizational innovation-decision and there is nothing which belongs to collective categories such as the decision of the government or any corporation or councils or board. Moreover, the Rogers generalizations regarding internal characteristics for the innovative organizations are most appropriate with the Sri Lankan FM adopted organizations.

**Keywords:** *Diffusion of Innovation, Profession, Facilities Management, Organisational Innovation, Sri Lanka.*

### 1. Introduction

Sri Lanka is a developing country whose building and infrastructure industry is rapidly developed (Lindholm, 2005). Oxford Business Group (2017) stated that there is a vast development in the construction industry of Sri Lanka since May 2009, the end of the country's civil war. Consequently, the need of a responsible person to plan, budget, allocate, design, construct, decorate, manage occupancy, maintenance, secure, redesign, rebuilt, transfer and disposal of working structures (Dhanushka, 2013). Although Facilities Management (FM) does not exist in Sri Lanka, these tasks are handled by the owners, tenants, asset manager, property manager, staff, or organisations of the working structures with different grades of success (Zheng, 2012). Primarily, almost all the organisation's main purpose is productivity maximization through increasing effectiveness and efficiency and also being competitive with their competitors, they have to fulfill the rules, regulations, codes and standards regarding the business environment (Silva H., 2011). Additionally, customer satisfactions act a major role to survive in the market as well, because of that, FM is needed to increase the productivity of the working environment without compromising the occupant's satisfaction which is one of their major roles (Gamagedara, 2014). The International Facilities Management Association (IFMA) defined, "Facility management (FM) is a profession that encompasses multiple disciplines to ensure functionality, comfort, safety, and efficiency of the built environment by integrating people, place, process and technology" (IFMA, 2020).

The good FM creates a vast enhancement in the efficiency and productivity of an organisation, its staff and customers by applying proper management techniques to provide a quality working environment with an optimum cost at the right time (Silva H., 2011). FM is not just a new name to existing practices in Sri Lanka, it's a new level which includes some functions which are carried out in the past by different other professionals and owners of the working structure, moreover, FM functions are done by different people who are engaged in core business which affects the core business and also the built environment quality and building structures (Mythiley, 2010). There are some pieces of evidence which ensure that the FM is a novel profession in Sri Lanka such as Although, seven postgraduate FM courses were existing in the United Kingdom before 2000 (Nutt, 1999), the first-degree programme was started in 2005 in Sri Lanka (Department of Building Economics, 2014). There were no professional authorizes or institutions for FM in Sri Lanka until 2009 to check the requirements of FM in a built Facility (Ranathunga, 2010). The first institution of FM profession was started in 2013, March as FM Group, then the foundation for an Institute for FM professionals in Sri Lanka was laid in 2015 and the status "Sri Lanka" was obtained in May 2016 (Institute of Facilities Management Sri Lanka [IFMSL], 2017). Also, Jones Lang LaSalle, a public company, is one of the leading FM

outsourcing companies in the world (Jones Lang LaSalle, 2017) and they arrived in Sri Lanka just about six (6) years ago to gain the first entry advantage, by doing researches on political conditions, economic trends and construction industry development of Sri Lanka (Ranatunga, 2017). Further, the profession FM is not spread widely all over the country, only a few office buildings are applied to FM (Perera, 2010). Hence, it is obvious that FM is a novel profession to Sri Lanka, an innovation to Sri Lanka according to Rogers' definition "An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adaptation".

It is vital to know the influencing factors and their influence is important for catalysing the diffusion of FM in Sri Lankan organisations. Hence, this study aims to identify the influencing factors and nature of their effect on FM diffusion in Sri Lankan organisations, FM as a sample for the profession. The paper begins with a literature review and continued with the research methodology. Then it jumps to research finding and discussion. It is ended up with a conclusion.

## 2. Literature Review

This section contains 2 subsections such as diffusion of innovation and FM as an organisational innovation.

### 2.1 DIFFUSION OF INNOVATION (DOI)

Diffusion of innovation (DOI) is a theory, describes the process of fresh ideas, practices, objects or technologies which spread within a social system (Rogers, 2003). Dr. Everett M. Roger was a distinguished professor and researcher on DOI theory. He was the momentous developer of DOI theory and the first edition of "Diffusion of Innovation" was published in 1962 and it is in the fifth edition at present. This book was designated by the Institute for Scientific Information in 1990 as largely cited on social science journals articles (Rogers, 2003, p. 378). Accordingly, this research was based on Rogers's theoretical framework, even though, less amount of professional diffusion studies was done according to Rogers's theory.

Innovation is derived from the Latin word "Novus", mean as an idea, material, or object perceived to be new by the relevant unit of adoption (Dearing, 2009). According to Rogers's statement, innovation is a novelty that beneficial is founded by its adopters. It is a practice, object or an idea which is sensed as new by an individual or any other adoption unit and an innovation's newness not only just involves in new knowledge but it can be expressed as persuasion or adaptation decision as well, Simply says if an individual senses an idea as new, that is an innovation even though, it may have been known by someone for a certain period of time but yet they never adopted or rejected that and also not developed attitudes, favorable or unfavorable (Rogers, 2003). In addition, innovation is defined as a process of creation, development or reinvention of ideas, objects and practices which are fresh for the adaptation unit (Walker, 2006). Moreover, the important opinion developed in the 1980s is that innovation can include rather than just technology, information (Tran, 2005). Innovation is not just only about technology development, it is more than that, it can be the nature of doing business in an organization (Rasul, 2003). Additionally, Organisation for Economic Cooperation and Development (OECD) stated innovation as the implementation of the new or significantly upgraded products, services, processes, marketing methods, organizational methods of business practices or workplace organization or external relations (2005, p. 46). According to the above statements, the innovation is not limited to any boundaries, which can be an idea, product, service, practices, process, concept, behaviour or knowledge.

The word "Diffusion" is derived from the Latin word, "Diffundere", which means "to spread out" (Wikipedia). It is defined as "the spread of an innovation in a market" (peres2010). Diffusion is the process through which an innovation is communicated using certain channels over time within the social system members, moreover, it is the process of communicating the innovation for a certain period of time (Rogers, 2003, p. 11). The theory of diffusion of innovation is seen as one of the ways of perceiving exposure to new objects ideas, or practice (Ifeduba, 2010). The outcome of diffusion differs in how the DOI theory is applied (Adams & Marie, 2011). There are some alterations occurred in the

structure and function of a social system, due to certain consequences that lead when diffusion happen (Rogers, 2003, p. 6). In addition, the four main elements of diffusion are innovation, communication channel, time and Social system, which could be identifiable in all diffusion as innovation.

## 2.2 FM AS AN ORGANISATIONAL INNOVATION

UNESCO Institute for Statistics (2005) defined innovation as the implementation of new or significantly improved processes or goods or services, or a new method of marketing or a new organizational method in business practices, workplace organization or external relations. Organisational innovation is defined as a new (or new to relevant adaption unit) ideas, products, processes or procedures are intentionally introduce and apply within an organization or a group, give significant benefits to individuals, organizations, groups or society (Omachonu & Einspruch, 2010). The innovation’s characteristics affect the adaptation changes and the degree of diffusion of innovation, as perceived by the adapting organisation (Wu, Lan, & Lee, 2011). Additionally, the characteristics of organizational leaders, organization and the environment in which it operates are the factors which affect the innovation adaption decision in an organisation (Dewett, Whittier, & Williams, 2007). In addition, in an organizational perspective, the innovation adoption may lead to flexibility, upgraded efficiency of operation, creation of better working practices and competitive advantage which confirm sustainable development of an organisation in a rapidly changing business environment (Kotsemir & Abroskin, 2013) and the innovation must merge well with the organisation, irrespective of how the organization accrues that innovation, to secure the full advantages of innovation (Hazen, Overstreet, & Cegielski, 2012). However, an organisation’s operational procedures to strategic goals and business models are affected by an innovation (Ye, Jha, & Desouza, 2015). One of the generalizations of Roger validated that, generally both innovation and organisation are changed in an organisational innovation (Rogers, 2003, p. 425). Also, as stated by Rogers in his book Diffusion of Innovations (2003), the characteristics of innovative organizations were de-rived from the early organisational innovation studies and most of these are same as innovative individuals’ characteristics, as example-generally large size organisations are more innovative as individuals with high socioeconomic status and high income. However certain characteristics of innovative organisations are not matching with individual innovation, as for example -structural characteristics of the organisation, which are summarized as follows with related to organisational innovativeness in Table 1.

Table 1:- Independent variables related to organisational innovativeness

Structural Characteristics		Description	Relationship
Individual (Leader)	Attributes towards change	Degree to which a leader of organisation accepts to change	Positive
Internal	Centralization	Degree to which control and power of an organization are concentrated in the hands of a comparatively few individuals	Negative
	Complexity	Degree to which members of an organisation, possess a fairly high level of knowledge and expertise	Positive
	Formalisation	Degree to which the member of an organisation is emphasized by the organisation to follow rules and procedures	Negative
	Interconnectedness	Degree to which the units of a social system are connected by interpersonal networks	Positive
	Organisational slack	Degree to which uncommitted resources are available to an organisation	Positive
	Size	Size of the organisation	Positive

External	System openness		Positive
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Source: - (Rogers, 2003, p. 411)

Diffusion of FM in Sri Lanka is considered as an innovation in organisation due to be a profession and management practice. The process of innovation in organisation is much more complex than individual innovation process (Rogers, 2003).

### 3. Research Methodology

The aim of this research is to identify the influencing factors and nature of their effect on FM diffusion in Sri Lankan organisations, FM as a sample for the profession. The quantitative approach is subjective, understanding the sense of the human or social problem (Creswell, 2014). Suitable research techniques had to be recognized following the research approach was selected, for the operation of the research (Yin R., 2009). Data collection and data analysis are the two broad parts of research techniques (Malewana, 2009). Accordingly, the comprehensive literature survey was used to get overview knowledge about the research problem and act as a base to design the questionnaire as well. The questionnaire was the vital data collection tool and was distributed to the top management of FM adopted organisations in Sri Lanka. The respondents' selection was done using a random sampling method with the available information. 36 respondents were selected and the questionnaire was filled through face to face meetings, as a result, that the respondent rate is 94.4%. The results of the survey show that, 23%, 12% and 9% of the respondents were respectively from the commercial, factory and construction sector. Moreover, 6% of the respondents are from residential, hospital and hotel sectors. When analysing the ownership of respondents' organisations, the majority (76%) are from private limited companies and 12% are semi-government organisations. Additionally, public limited, partnership, proprietorship and government-owned organisations have less percentage (3%). In addition, the collected data were analysed by using the Manual content analysis method and 95% confidence interval testing to validate the research finding and analysis.

### 4. Research findings and analysis

This section consists of four sub sections such as FM as organisational innovation, changes in the organisational structure, internal characteristics of an FM adopted organization in Sri Lanka and applicability of FM in Sri Lankan organisations.

#### 4.1 FM AS AN ORGANISATIONAL INNOVATION

The FM adoption decision in an organisation can be taken by the owner of the organisation, Board of Directors (BOD) / Managing Director (MD) of the organisation, the parent company of that organisation, any authority or due to condition applied by clients. Table 2 clearly shows the percentages of each category by whom the FM adoption decision was taken in the Sri Lankan organisations.

Table 2: Percentage of FM adaption decision makers in Sri Lankan Organisations

Categories	Percentages
Own decision of the owner	11.76%
Board of Directors (BOD) / Managing Director (MD)	76.47%
Decision of parent company	32.35%
Due to condition applied by the clients	17.65%
Any decision by an authority	0.00%
Others	2.94%

According to the literature findings, organizational innovation decisions are categorized as optional, collective, authority and contingent. Along with the questionnaire survey results, the Board of Directors (BOD) / Managing Director (MD) belong to Authority, the owner's own decision belongs to

optional and the parent company and the condition applied by the client are belonging to contingent. There is nothing that belongs to collective category FM adoption decision in Sri Lanka, for example - government or any corporation or councils or board. Figure 1 illustrates the FM adoption decision taken in Sri Lankan organisations along with the type of organisational innovation decision.

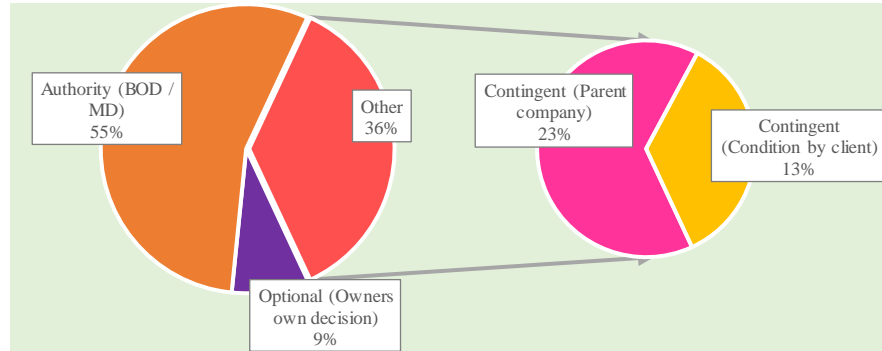


Figure 1: FM adoption decision taken in Sri Lankan organisations along with the type of organisational innovation decision.

#### 4.2 CHANGES IN THE ORGANISATIONAL STRUCTURE

When adopting a new idea (innovation), there may be changes that occur. likewise when adopting FM in their organisation , there may be some changes that can happen in the organisational structures as well. To identify whether any changes happen in the organisational structure or not, the question was asked from the respondents.

41% of respondents specified as changes occurred in the organisational structure due to the adoption of FM in their organisation in Sri Lanka. Those changes are summarized as,

- Addition of a new position with or without direct reporting responsibility to the Board of Directors(BOD)
- Forming a new department or division for FM
- Functional reengineering of a certain portion of organisational structures (eg:-separate or incorporate department)
- Name, no of staff and responsibilities of some departments are changed.

The rest of the respondents (59%) specified that there were no changes occurred in the organisational structure due to the adoption of FM in their organisations. There were some reasons which they stated for there were no changes occurred, They are summarized as

- Incorporate FM functions with another existing component of the structure
- Adopt or require FM belong to an existing division
- Outsource FM functions and organization which are government-owned.

95% confidence interval test was done to validate the above information which is 20 respondents stated as there were no changes in the organizational structure of them due to FM adoption and got 0.4228 as the lower limit and 0.7537 as the upper limit for population portion as there are no changes in organizational structure by adopting FM in their organisations. Both limits are within the interval (0, 1). Averagely 58.82% of respondents' organisations had no changes in their organizational structure due to FM adoption in their organisation. Accordingly, we are 95% confident that the percentage varies within the range (42.28%, 75.37%).

### 4.3 INTERNAL CHARACTERISTICS OF AN FM ADOPTED ORGANIZATION IN SRI LANKA

Figure 2 shows the percentages of each category such as high, medium and low of the internal organizational characteristics which affect the FM adoption in Sri Lankan organisations. The generalization derived by Rogers in his book Diffusion of Innovation regarding internal characteristics for the innovative organisations is most appropriate with the Sri Lankan FM adopted organisations.

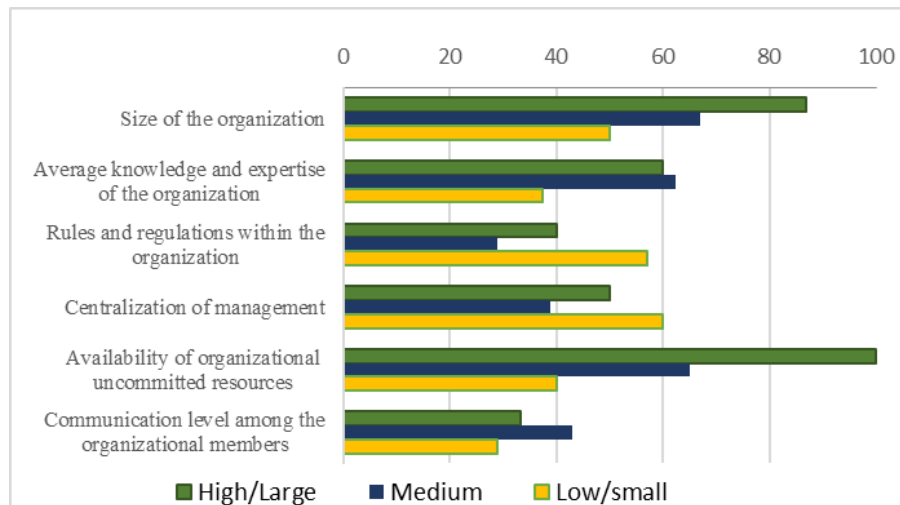


Figure 2: Affection of internal organisational factors in FM adoption decision

As mentioned in the literature section, Table 1 shows the relationship between innovative organizations and the internal organizational characteristics according to Rogers's perspective. As along with the generalization of Rogers, size of the organisation has the positive relationship innovativeness in an organisation .87% of the large organisation's respondents stated that size of the organisation is an important characteristic for the FM adoption in their organisation but only 50% of the small size organizations stated the size as a factor for FM adoption in their organisation. According to the generalization, the average knowledge and expertise of the organisation also has a positive relationship with the innovativeness of the organisation. But this survey result shows that high percentage (63%) of respondents stated as average knowledge and expertise of the organisation is a factor for the FM adoption in their organizations. Next to that, organisations having a high level of average knowledge and expertise of the organisation are sixty percentages (60%). Therefore, it concludes that average knowledge and expertise of the organisation's characteristics also compile with the generalization even though it is slightly deviated (3% only) from the generalization. Subsequently, the next two characteristics of the innovative organizations are rules and regulations within the organisation and the centralization of management in an organisation. Both of these characteristics have a negative relationship with the innovativeness of the organizations. Along with the summary of the survey, most of the respondents (57% & 60% respectively) who specified these two characteristics as a factor for the adoption of FM in their organisation are low level. So, this also complies with the generalization of Rogers.

The questionnaire survey reflects that the availability of uncommitted resources in the organisation has a positive relationship with innovativeness organisations and which is a very important factor that affects the FM adoption in their organisation. As evidence, 100% of the respondents who have a high level of uncommitted resources in their organisation stated as it are a factor for the FM adoption in their organizations. The last characteristic is the communication level among the organizational members, which has a positive relationship with the innovativeness of the organisation. The survey result gives 33%, 43%, and 29% respectively high, medium and low level of communication among the organizational members. But this shows that medium level communication among the organizational members has stated by more respondents as one of the factors for FM adoption and high level comes next to that. As a conclusion, in Sri Lankan context also internal characteristics of the innovativeness

of organizations (FM adoption in the organizations) are compiled with the generalizations of Rogers’s diffusion theory which is validated from this survey result depicted in Figure 2.

#### 4.4 APPLICABILITY OF FM IN SRI LANKAN ORGANISATIONS

When an organization discusses and decides about the FM adoption in their organizations, there are some factors that affect positively and lead to the FM adoption direction and some factors which are negatively acted in the FM adoption decision and lead to the rejection of FM adoption in their organizations. Along with the outcome of the research findings, it is obvious that the following are the critical factors that lead to adopting FM in Sri Lankan organizations are stated in Table 2. Accordingly, half of the respondents indicated the factors which make them delay adopting FM in their organizations, so those factors can be considered as the reason for the rejection or non-adoption of FM in Sri Lankan organisations, which are stated in Table 3 as well.

Table 3: Factors which lead to adopt FM and the factors which lead to reject or non-adoption of FM in Sri Lankan Organisations

<b>Factors which lead to adopt FM</b>	<b>Factors which lead to reject or non-adaption of FM</b>
To achieve sustainability	Lack of deep technical knowledge
To transfer the managing responsibility of property under a single hand	It is difficult to specify the scope and job description of FM
To upgrade the safety and security of the environment	The recruit procedure of FM in the first is slightly lengthily
To fulfil the standards, compliances and international certifications	Afraid about conflicts which may arise between FM and other professionals
To satisfy clients and customers	Less availability of resources
To optimize resource usage	Additional cost
To improve the FM related documentation and reports	Difficult to place the FM in the organizational hierarchy
To reduce conflict between inter departments	Unawareness about FM profession
To be competitive in the market	Resistances arise from existing employees because they may have to move out from their comfort zone.
To upgrade the quality of the utility system	

Moreover, the questionnaire survey reflects that 41% of respondents’ organisations adopt FM to gain benefits to the organization but the other 59% of respondents’ organisations, majority of organisations adopt FM to overcome certain problems in their organisation. It was validated using a 95% confidence interval test and got 0.3919 as a lower limit and 0.7257 as the upper limit. As these proportions are within the interval (0, 1), it is understandable that FM adoption in Sri Lankan organisations is taken place to overcome the existing issues in the organisations. The competitive advantages of adopting FM or solution by the FM adoption for certain problems in the organizations were summarized as follows;

- To improve the proper maintenance management
- Effective management of occupational health and safety
- To efficiently manage the facilities
- Improving sustainability compliance
- In order to maintain the utilities
- To reduce Space issues and optimum use of resources
- To manage Labour regulations
- To conduct the facility audits like safety audit, energy audit and to achieve standards
- Disaster management and to have a best risk assessment
- Implementation of waste management

- To fulfil client needs and customer satisfaction
- To get expert advice in incorporation of FM services

## 5. Conclusion

FM is the management of the working environment by the integration of people, process, and technology to support the core business with the intention of enhancing the performance of that environment. In the Sri Lankan organisations, the FM adoption decisions in the organisations are taken by the Board of Directors / Managing Director, organisation's owners, parent company and due to client condition. Among the Rogers' innovation organisational decision-making category, authority type has more than half a percentage in Sri Lankan FM diffusion and there is no collective decision-making category like government or any corporation similar to western provision organisations have to adopt FM in their organisations. Also, when adopting FM in the Sri Lankan organisations, the majority of the organisation has not made changes in their organisational structure to adopt FM. Normally in innovation diffusion, there must be both positive and negative aspects of that. Likewise, some of the critical factors which lead to adopting FM in the Sri Lankan organizations are sustainability, single management responsibility of property, FM related documentation improvisation, and competition in the market. Moreover, the internal organisational factor of FM diffusion in Sri Lankan organisations coincides with the Rogers generalisations. In conclusion, the size of the organisation and availability of uncommitted resources of the organisation has a positive relationship with FM diffusion in Sri Lanka. The communication level among the average knowledge and expertise of the organisational members has a positive/neutral relationship. Rules and regulations within the organisation and centralisation of the organisations have a negative relationship with the diffusion of FM in Sri Lankan organisations. Finally, outcomes of this research will be beneficial for the industry practitioners and also for the diffusion of FM in Sri Lankan organisations. Moreover, this will help to diffuse future fresh professional diffusion within Sri Lankan organisations.

## 6. References

- Adams, C., & Marie, G. (2011). A diffusion approach to study leadership reform. *Journal of Educational Administration*, 49(4), 134-152.
- Arditi, D., Kale, S., & Tangkar, M. (1997). Innovation in construction equipment and its flow into the construction industry. *J.Constr.Engrg.and Mgmt.ASCE*, 123(4), 371-378.
- Chaudhuri, A. (1994). The Diffusion of an Innovation in Indonesia. *Journal of Product & Brand Management*, 3(3), 19-26. doi:10.1108/10610429410067405
- Creswell, J. (2014). *Research Design: Qualitative, Quantitative and Mixed Method Approaches (4th Edition)*. Sage Publications.
- Department of Building Economics*. (2017). Retrieved June 07, 2017, from <http://www.becon.mrt.ac.lk/index.php/events>
- Dewett, T., Whittier, N., & Williams, S. (2007). Internal diffusion: the conceptualizing innovation implementation. *Competitiveness Review: An International Business Journal*, 17(1/2), 8-25. Retrieved from <http://dx.doi.org/10.1108/10595420710816579>
- Dhanushka, G. (2013). *Standard professional practices of Facilities Management in commercial buildings in Sri Lanka*. University of Moratuwa, Department of Building Economics.
- Gamedara, C. (2014). *Professional practices on facilities management in hotel sector of Sri Lanka*. unpublished, University of Moratuwa, Department of Building Economics.
- Hazen, B., Overstreet, R., & Cegielski, C. (2012). Supply chain innovation diffusion: going beyond adaptation. *The International Journal of Logistics Management*, 23(1), 119-134. Retrieved from <http://dx.doi.org/10.1108/09574091211226957>
- Ifeduba, E. (2010). Digital publishing in Nigeria: evidence of adoption and implications for sustainable development. *Journal of Research in National Development*, 8(1).
- Institute of Facilities Management Sri Lanka [IFMSL]*. (2017). Retrieved May 25, 2017, from <http://ifmsl.lk/about-us/>
- Jones Lang LaSalle*. (2017, August 13). Retrieved from JLL: [www.jll.com/about](http://www.jll.com/about)
- Kotsemir, M., & Abroskin, A. (2013). *INNOVATION CONCEPTS AND TYPOLOGY – AN EVOLUTIONARY DISCUSSION*. Working paper, National Research University Higher School of Economics.
- Lindholm, A. (2005). *Public facilities management services in local government*.
- Malewana, M. (2009). *learning processes of construction project teams in Sri Lanka*. Unpublished, University of Moratuwa, Department of Building Economics.
- Mythiley, S. (2010). *The status of facilities management in commercial buildings*. University of Moratuwa, Building Economics.
- Nutt, B. (1999). Linking FM practice and research. *Facilities*, 17(1/2), 11-17.



- Omachonu, V., & Einspruch, N. (2010). Innovation in Healthcare Delivery Systems: A Conceptual Framework. *The Public Sector Innovation Journal*, 15(1).
- Organisation for Economic Cooperation and Development (OECD). (2005). Guidelines for Collecting and Interpreting Innovation Data. In 3 (Ed.), *Oslo Manuals*. Paris: OECD.
- Oxford Business Group. (2017). Retrieved May 26, 2017, from <http://www.oxfordbusinessgroup.com/overview/growth-spurt-sector-seeing-flurry-activity-country-rushes-make-years-underinvestment>
- Perera, J. (2010). *Managing the Knowledge Sharing process of a Facilities Management team in Sri Lanka office buildings*. Unpublished, University of Moratuwa, Department of Building Economics.
- Premkumar, G., Ramamurthy, K., & Nilakanta, S. (1994). Implementation of Electronic Data Interchange: An Innovation Diffusion Perspective. *Journal of Management Information Systems*, 11(2), 157-186. Retrieved from <http://www.jstor.org/stable/40398110>
- Ranathunga, W. (2010). *Evaluate the importance of facilities manager's role related to the condominium Sri Lanka*. University of Moratuwa, Building Economics.
- Ranathunga, S. (2017, June 02). Retrieved from <https://mail.google.com/mail/u/o/#inbox/15ba390447e3caa0>
- Rasul, F. (2003). Seven Canadian Firms in Profile. In *The Practice of Innovation*. Industry Canada.
- Rogers, E. (2003). *Diffusion of Innovations*. New York: Free Press.
- Silva, H. (2011). *Developing framework to assess the sustain of Sri Lanka commercial buildings relation to indoor environment quality*. University of Moratuwa, Building Economics.
- Tran, L. (2005). Diffusion of community information networks in New Zealand public libraries A case study. *New Library World*, 106(5/6), 269-283.
- UNESCO Institute for Statistics. (2005). *The Measurement of Scientific and Technological Activities* (3 ed.). Oslo Manual.
- Valente, T., & Davis, R. (1999, November). Accelerating the Diffusion of Innovations Using Opinion Leaders. *The Social Diffusion of Ideas and Things*, 566, 55-67. Retrieved from <http://www.jstor.org/stable/1048842>
- Walker, R. (2006). Innovation Type and Diffusion: an Empirical analysis of Local Government. *Public Administration*, 84(2), 311-335.
- wikipedia. (2017, May 26). Retrieved May 26, 2017, from <https://en.wikipedia.org/wiki/Diffusion>
- Ye, C., Jha, S., & Desouza, K. (2015). Communicating the business value of innovation. *International Journal of Innovation Science*, 7(1), 1-12. Retrieved from <http://dx.doi.org/10.1260/1757-2223.7.1.1>
- Yin, R. (2009). *Case study research: design and methods* (4 ed.). California: Sage publications. Retrieved from <http://www.amazon.com/Case-Study-Research-Methods-Applied/dp/1412960991>
- Zheng, L. (2012). *Developing the understanding of facility management demand by small and medium enterprises in the UK and China*. (Unpublished master's thesis), The Bartlett School of Graduate Studies, London.